OIPE IAP52
OCT 07 2005
PATENT & TRADEMARK OFFICE

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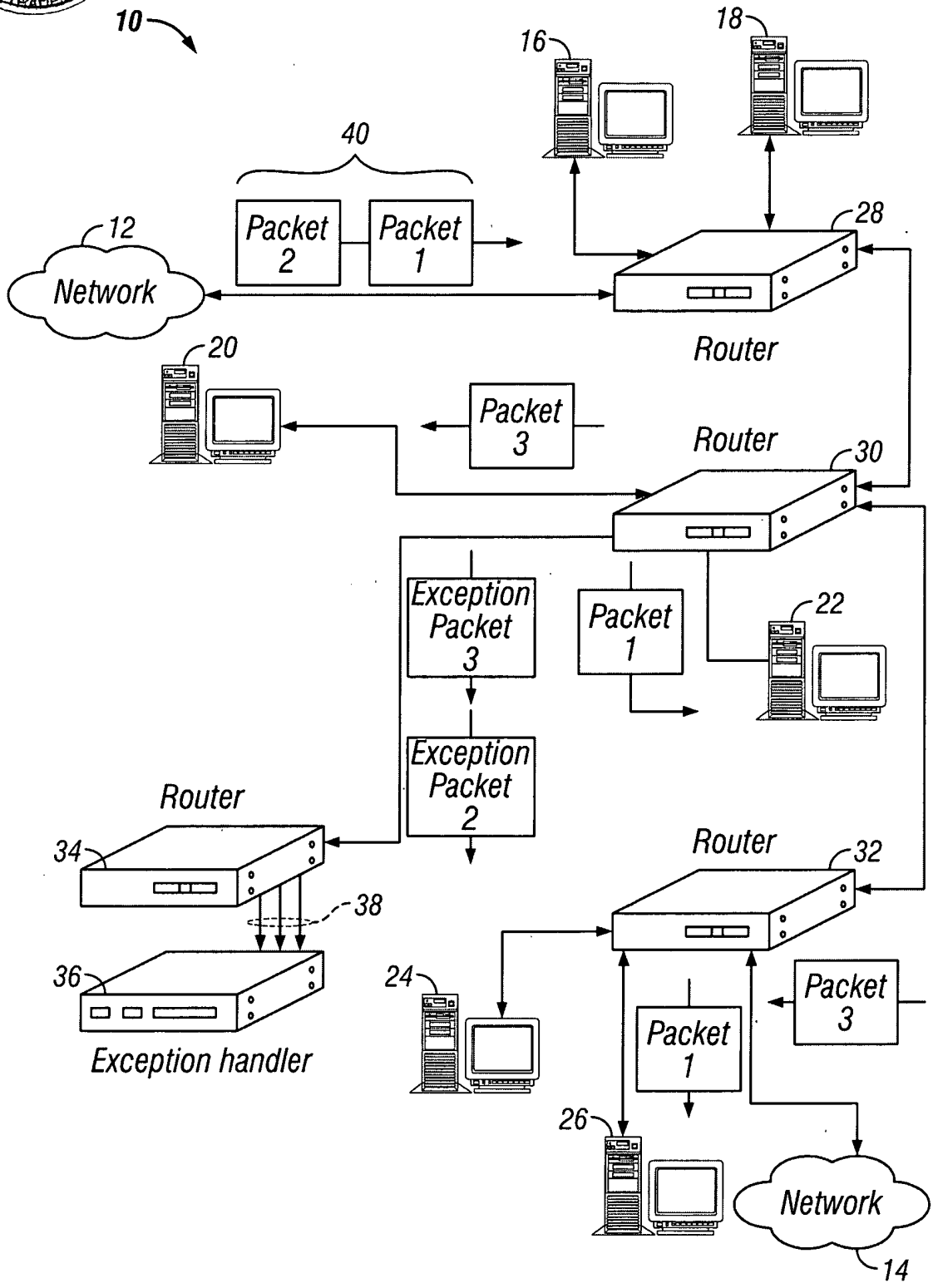

FIG. 1

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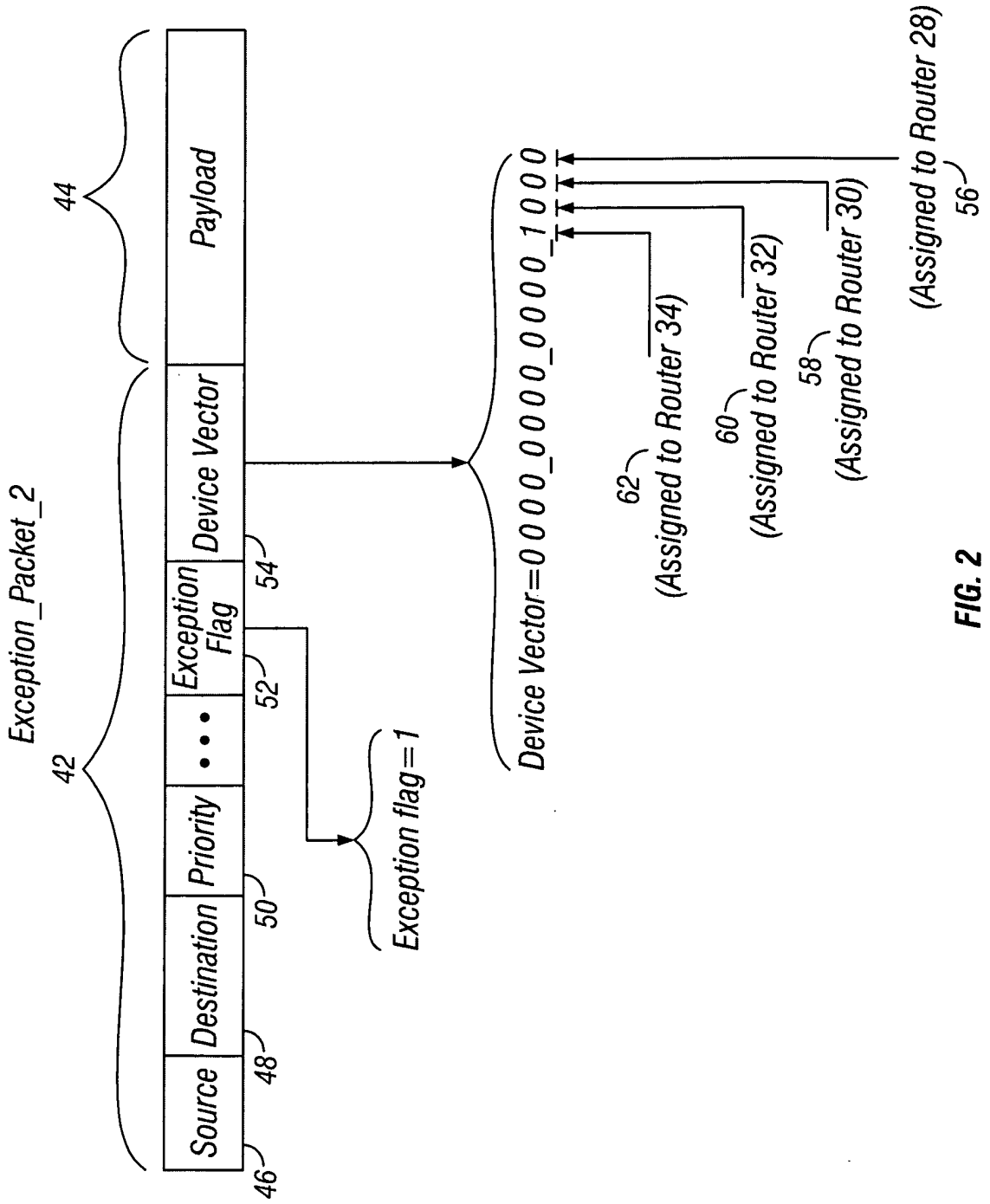
Exception_Packet_2
42
44
Source
Destination
Priority
• • •
Exception Flag
Device Vector
Payload
46
48
50
52
54
Exception flag=1
Device Vector=0 0 0 0_0 0 0 0_0 0 0 0_1 0 0 0
62
(Assigned to Router 34)
60
(Assigned to Router 32)
58
(Assigned to Router 30)
(Assigned to Router 28)
56

FIG. 2

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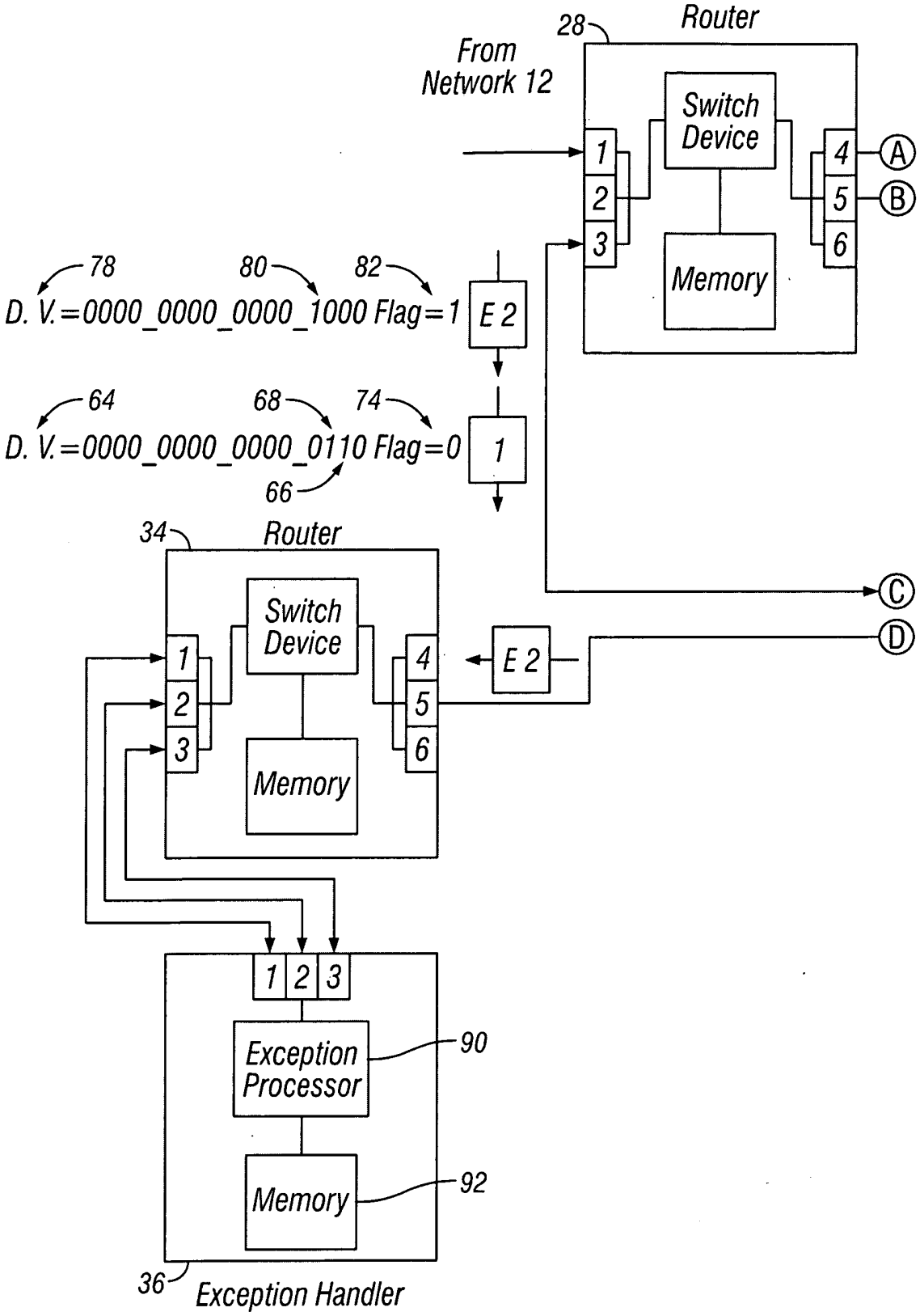
28
Router
From Network 12
Switch Device
1
2
3
4
5
6
A
B
Memory
78
80
82
D. V.=0000_0000_0000_1000 Flag=1
E 2
64
68
74
D. V.=0000_0000_0000_0110 Flag=0
1
66
34
Router
Switch Device
1
2
3
4
5
6
C
D
E 2
Memory
1 2 3
Exception Processor
90
Memory
92
36
Exception Handler

FIG. 3A

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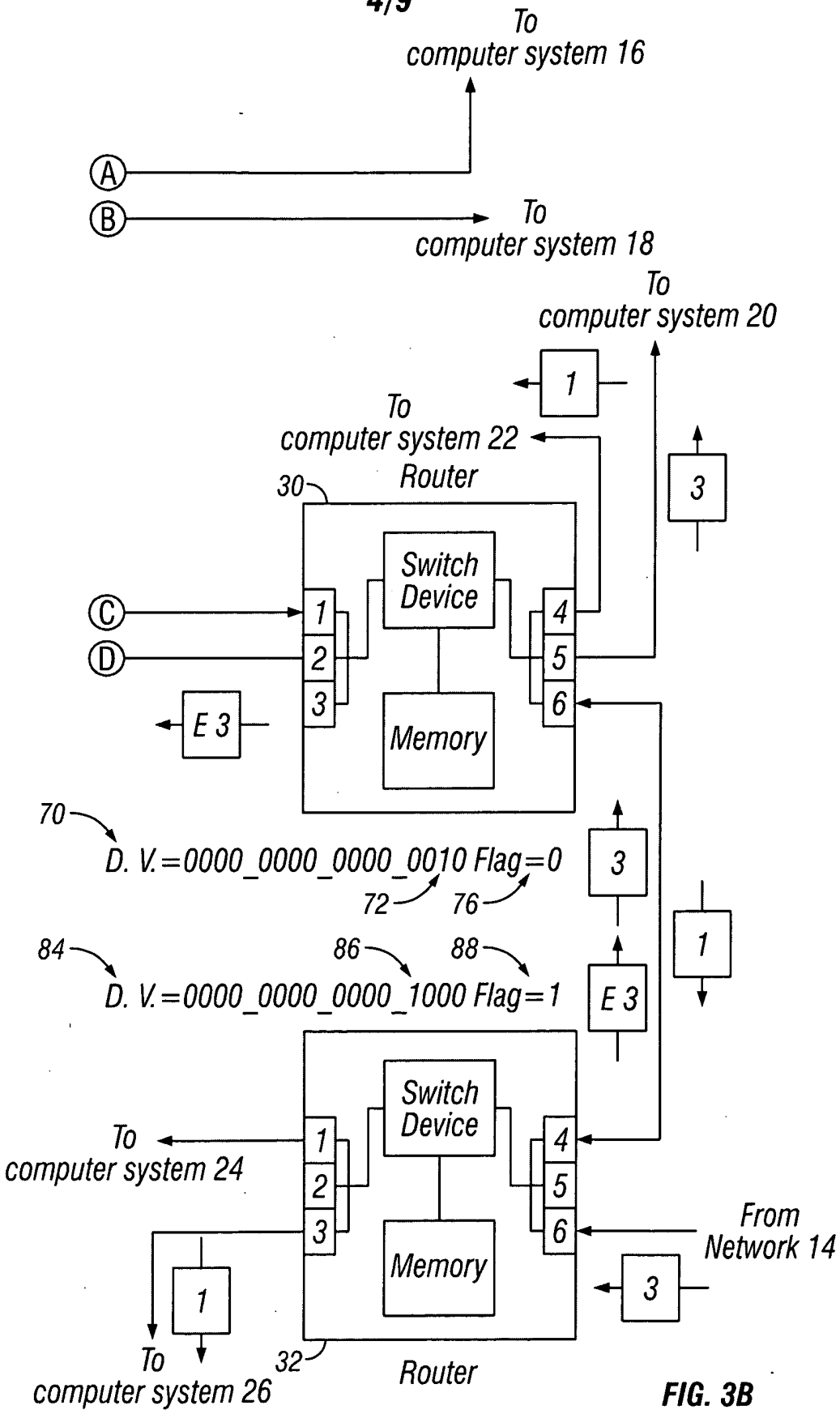
To computer system 16
A
B
To computer system 18
To computer system 20
1
To computer system 22
Router
30
3
Switch Device
C
D
1
2
3
4
5
6
E 3
Memory
70
D. V.=0000_0000_0000_0010 Flag=0
72
76
3
1
84
86
88
D. V.=0000_0000_0000_1000 Flag=1
E 3
Switch Device
To computer system 24
1
2
3
4
5
6
From Network 14
Memory
3
1
To computer system 26
32
Router

FIG. 3B

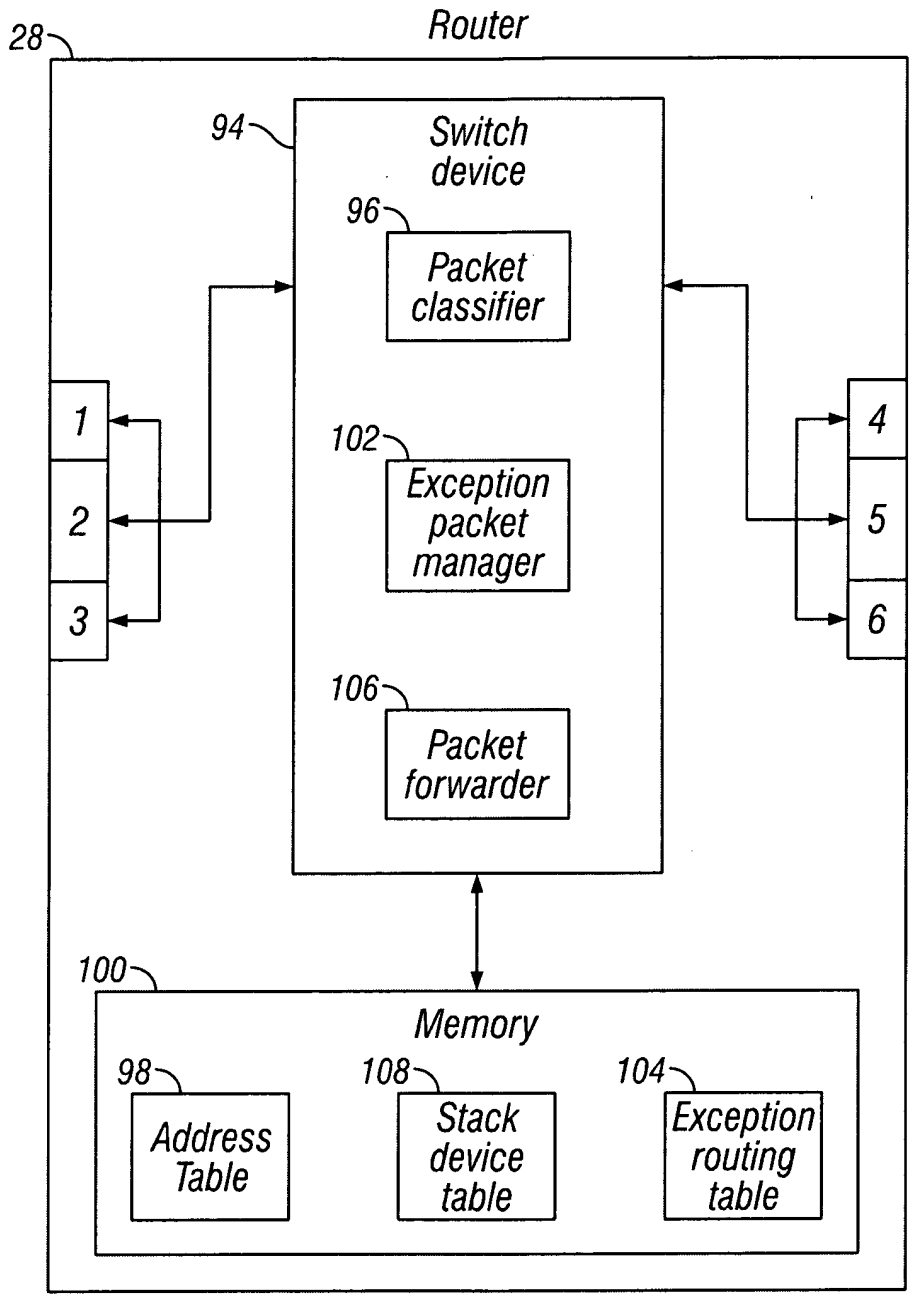
28
Router
94
Switch device
96
Packet classifier
1
2
3
4
5
6
102
Exception packet manager
106
Packet forwarder
100
Memory
98
Address Table
108
Stack device table
104
Exception routing table

FIG. 4

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110

Stack device table stored in Router 28

Stack Device Number	Router 28 Port Number
30	3
32	3
34	3

118

Exception routing table stored in Router 28

Stack Device Number	Router 28 Port Number
34	-

112

Stack device table stored in Router 30

Stack Device Number	Router 30 Port Number
28	1
32	6
34	2

120

Exception routing table stored in Router 30

Stack Device Number	Router 30 Port Number
34	-

114

Stack device table stored in Router 32

Stack Device Number	Router 32 Port Number
28	4
30	4
34	4

122

Exception routing table stored in Router 32

Stack Device Number	Router 32 Port Number
34	-

116

Stack device table stored in Router 34

Stack Device Number	Router 34 Port Number
28	5
30	5
32	5

124

Exception routing table stored in Router 34

Non-Stack Device Number	Router 34 Port Number
36	1, 2, 3

FIG. 5

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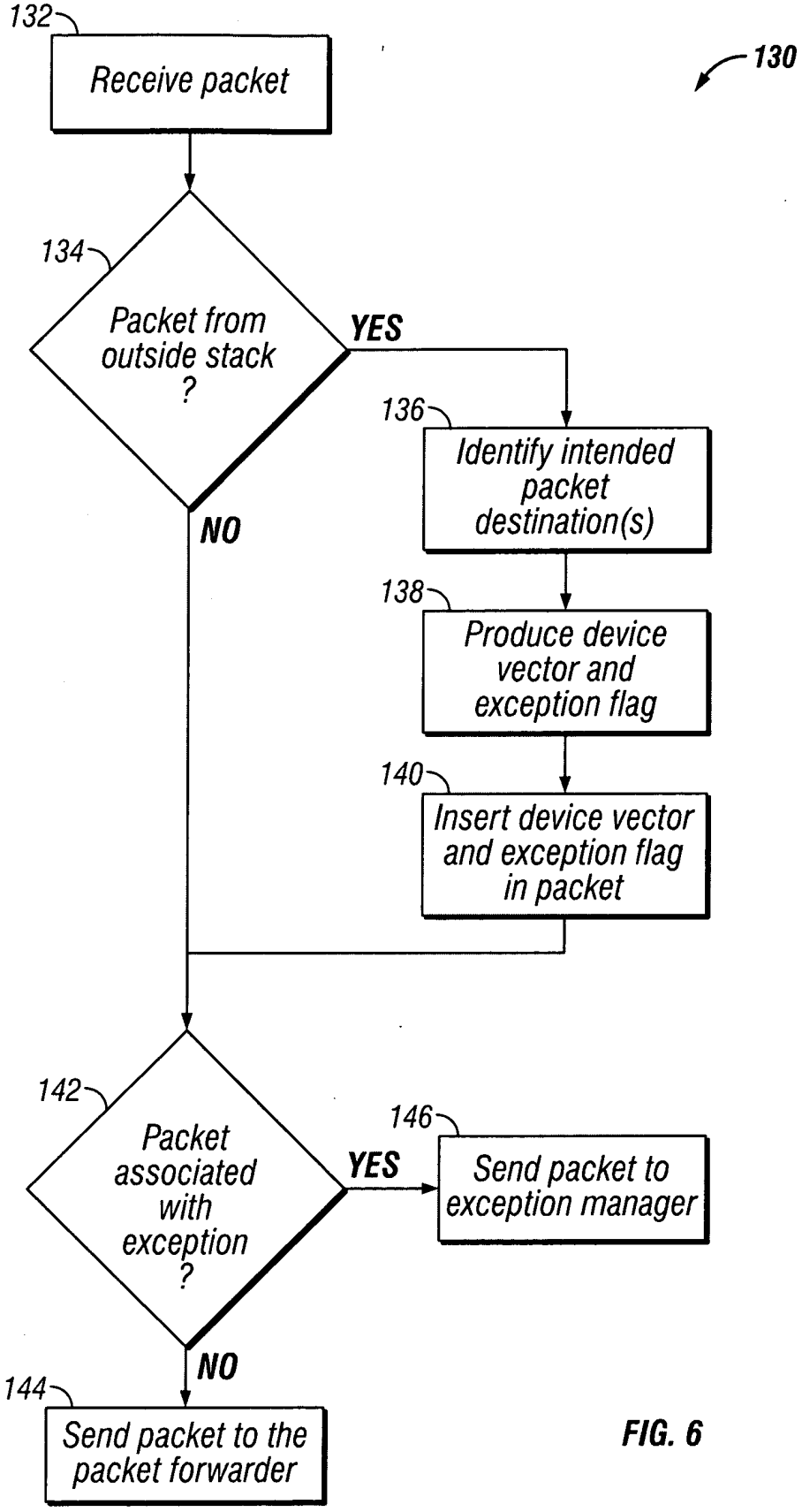
132
Receive packet
130
134
Packet from outside stack ?
YES
NO
136
Identify intended packet destination(s)
138
Produce device vector and exception flag
140
Insert device vector and exception flag in packet
142
Packet associated with exception ?
YES
146
Send packet to exception manager
NO
144
Send packet to the packet forwarder

FIG. 6

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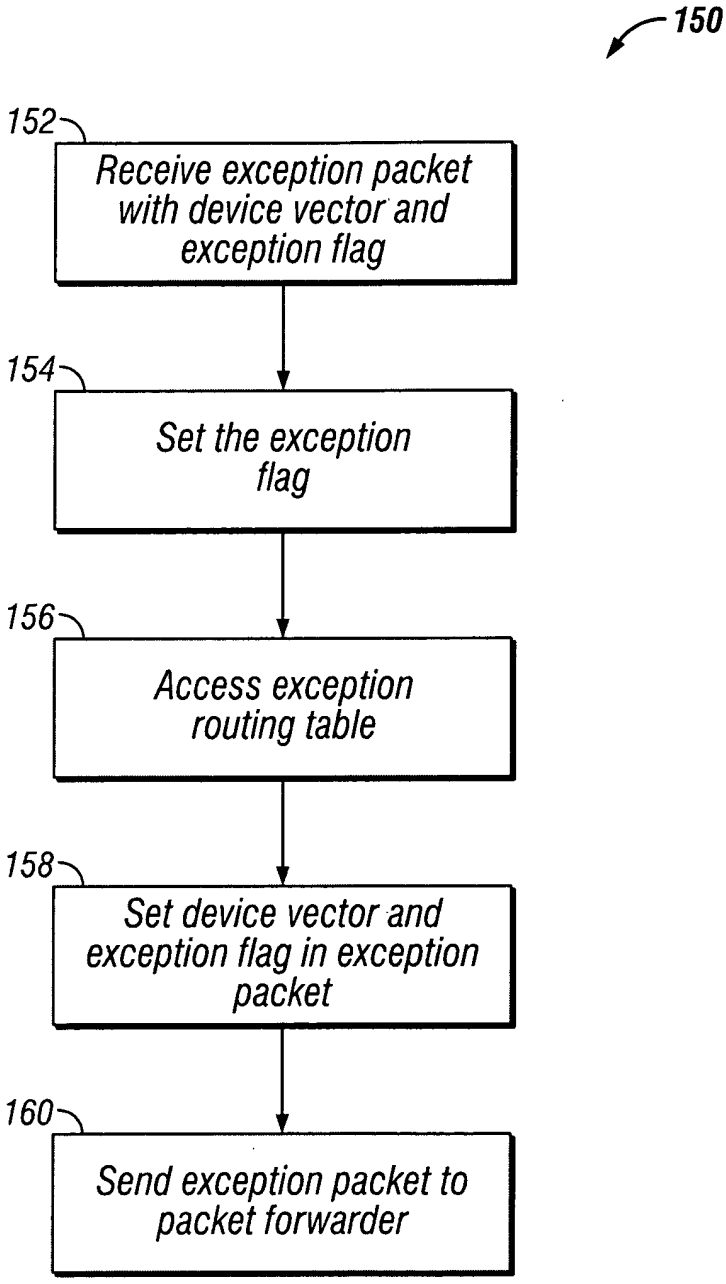
150
152
Receive exception packet with device vector and exception flag
154
Set the exception flag
156
Access exception routing table
158
Set device vector and exception flag in exception packet
160
Send exception packet to packet forwarder

FIG. 7

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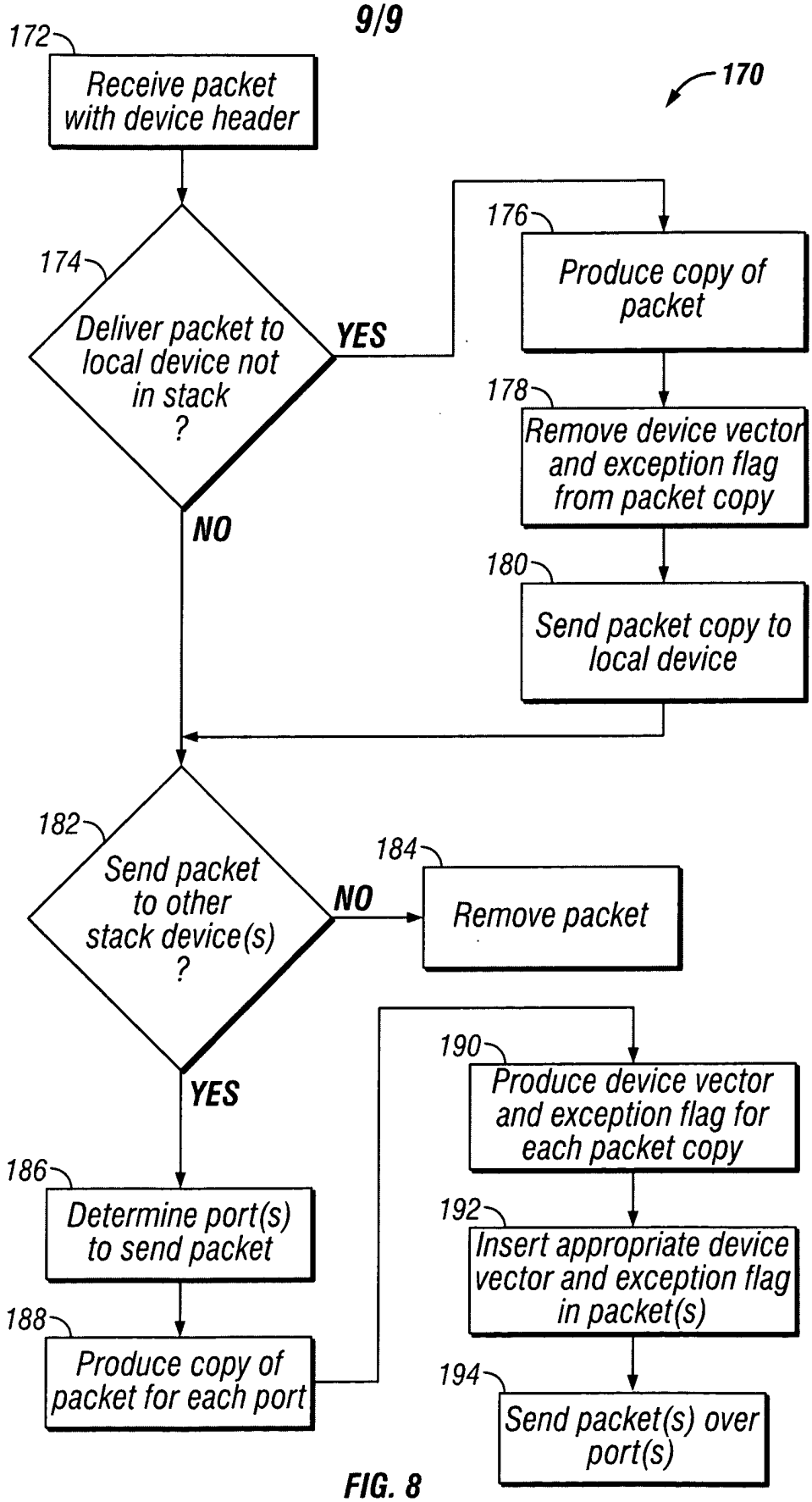
172
Receive packet with device header
170
174
Deliver packet to local device not in stack ?
YES
NO
176
Produce copy of packet
178
Remove device vector and exception flag from packet copy
180
Send packet copy to local device
182
Send packet to other stack device(s) ?
NO
184
Remove packet
YES
186
Determine port(s) to send packet
188
Produce copy of packet for each port
190
Produce device vector and exception flag for each packet copy
192
Insert appropriate device vector and exception flag in packet(s)
194
Send packet(s) over port(s)

FIG. 8